DOCUMENT RESUME

ED 220 962 EA 014 947

AUTHOR Hord, Shirley M.; Goldstein, Marcia L.
TITLE What Do Principals Do to Facilitate Change: Their Interventions.
INSTITUTION Texas Univ., Austin. Research and Development Center for Teacher Education.
SPONS AGENCY National Inst. of Education (ED), Washington, DC.
PUB DATE Mar 82
NOTE 26p.; Paper presented at the Annual Meeting of the American Educational Research Association (New York, NY, March 19-23, 1982).

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Administrator Role; *Change Agents; Change Strategies; Classification; Elementary Education; *Instructional Innovation; *Intervention; Longitudinal Studies; Models; *Principals; *Program Implementation; Tables (Data); *Teacher Administrator Relationship
IDENTIFIERS *Principal Teacher Interaction Study

ABSTRACT

Researchers using a combination of principal logs, on-site observation, face-to-face interviews, and regularly scheduled telephone interviews documented how principals intervene in the management of school change on both a day-to-day and a year-long basis. The data are from the Principal-Teacher Interaction Study conducted at the Austin campus of the University of Texas. Two analytical frameworks, a "taxonomy of interventions" and an "anatomy of interventions," were used to structure the data collection and to analyze the behavior of the principals. The taxonomy of interventions involves the identification of levels of interventions. This paper focuses on the analysis of "incident" interventions, the smallest intervention unit. The anatomy of interventions involves the examination of each individual incident-level intervention in terms of its internal parts. Findings reported are from studies of three California school principals in their first year of implementing a writing composition program, and of three Florida principals in their second year of the implementation of a mathematics curriculum. Frequencies of the targets, functions, medium, and flow of the principals' interventions are presented and discussed. One of the important findings of the study is that support and facilitation for teachers continued throughout the second year of implementation with little decrease in activity by the principals. (Author/MLF)

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WHAT DO PRINCIPALS DO TO FACILITATE CHANGE: THEIR INTERVENTIONS

Shirley M. Hord

Marcia L. Goldstein

Research and Development Center for Teacher Education
The University of Texas at Austin

Paper presented at the annual meeting of the
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What Do Principals Do To Facilitate Change: Their Interventions[1,2,3]

Shirley M. Hord

Marcia L. Goldstein

Research and Development Center for Teacher Education
The Universtiy of Texas at Austin

Current commentaries are consistent about the importance of the principal's role as instructional leader. It is clear that principals are expected to exercise this role. What is less clear is what principals can do on a day to day basis to execute the leadership role with their faculties. This is especially true when considering what the principal might do in the particularly sensitive area of facilitating instructional change and school improvement efforts. Exactly how do principals facilitate implementation of new programs or procedures?

To answer this question has been the goal of a large, in-depth study of principals as change facilitators. This study was initiated by staff of the Research and Development Center for Teacher Education at the University of

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[1]This paper was presented at the annual meeting of the American Educational Research Association, New York City, March 1982.

[2]The research described herein was conducted under contract with the National Institute of Education. The opinions expressed are those of the authors and do not reflect the position or policy of the National Institute of Education, and no endorsement by the National Institute of Education should be inferred.

[3]This paper reports the preliminary findings from the Principal-Teacher Interaction Study. The reader is referred to the paper describing the procedures used for collecting and analyzing the data, "Procedures for Quantitative Analysis of Change Facilitator's Interventions," Hord & Hall, 1982.

Texas in order to describe the daily behaviors of principals involved in school change efforts. To do this, principals' interventions[4] on a day to day basis, as well as the larger gestalt of the year, were documented using a combination of principal log, on-site observation, face-to-face interviews and regularly scheduled telephone interviews (Goldstein & Rutherford, 1982). The resulting intervention data were then coded for quantitative analysis using analytical frameworks described below. The first logical step in the analysis of the principals' coded data are frequency counts of the interventions by the various codes. Because the principals were selected to represent different years of implementation in the study, i.e. first, second or third year, it is possible to contrast their interventions across several years.

This paper reports on the specifically described actions of principals engaged in the management of school change. Two analytical frameworks developed out of previous change research were used to structure the data collection and to analyze the behaviors of principals. These frameworks will be briefly described. The major portion of the paper will focus on reporting what the principals did to facilitate implementation of an innovation. The paper will conclude with a discussion of generalizations and implications derived from observing, documenting and analyzing principal behaviors.

Two Intervention Frameworks

The study of the principals involved in-depth documentation of their interactions with their teachers. Two analytical frameworks, the Taxonomy of Interventions and the Anatomy of Interventions were used to focus the

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[4]An intervention is an action or event or a set of actions or events that influences use of an innovation--a process or product that is new to a potential user is considered an innovation (Hall, Zigarmi & Hord, 1979).

documentation and subsequently to analyze the data. These two frameworks are briefly reviewed.

Taxonomy of Interventions

This conceptualization of interventions was developed out of several prior studies of implementation. The majority of the data for the taxonomy building was collected from a junior high school study (Analysis of Change Agent Interventions in a Two-Year Innovation Implementation Effort in One Junior High School, 1979); however, ethnographic data from an elementary school study (Making Change Happen: A Case Study of School District Implementation, 1980) was also an important source. The analysis and synthesis of these data resulted in the identification of "levels" of interventions. The levels convey a sense of the size, magnitude or degree of impact of the interventions. The levels are hierarchical, tending to range from the more global or general to the more specific and concrete (Hall, Zigarmi & Hord, 1979).

The broadest level is that of policy, followed in descending order by game plan, strategy, tactic, and incident. Incident interventions are small in terms of duration and the number of individuals involved. An incident is the smallest intervention unit.

> An incident is an interaction that occurs between individuals (e.g., a short interaction between the change facilitator and a teacher) or may be the delivery of a single action or event to many individuals at the same time (e.g., a memo from a change facilitator to all teachers (Hall, Zigarmi & Hord, 1979, P. 13).

This paper will focus on the analysis of incident interventions made by principals. Additional information about the levels of the Taxonomy may be found in Hall, Zigarmi & Hord, (1979).

Anatomy of Interventions

The second intervention framework makes it possible to examine each individual incident level intervention in terms of its internal parts. This system which describes and codes common properties of each intervention is based on seven dimensions:

Sublevels -- degree of complexity of the action

Sources -- person(s) who act or events that occur to influence use of the innovation

Targets -- person(s)/process toward whom the intervention is directed.

Functions -- the purpose(s) of the intervention

Medium -- the mode or form of action between the Source and Target

Flow -- the direction of the action

Location -- where the intervention takes place (Hord, Hall, & Zigarmi, 1980, p. 7).

Within each dimension, categories or "kinds" specify possible variations of the general dimension. That is, under sources the "kinds" would include clients, individual users, all users as a group, district decision makers, etc. Definitions, examples and further information about the Anatomy may be found in Hord, Hall & Zigarmi (1980). The kinds of each of the seven dimensions of each principal's incident level interventions were analyzed and coded using this Anatomy schema. Please see Hord & Hall (1982) for a fuller explication of the procedure.

The findings in this paper present the results of the first data analysis of incident level interventions from the Principal-Teacher Interaction Study. The extensive data base from this study is expected to be further analyzed in subsequent steps. In-depth school by school case studies will be developed to reveal detailed and more elegant analyses of each principal's interventions

(Stiegelbauer, Goldstein, & Huling, 1982). In contrast, this paper will present frequency data from preliminary analyses of principals' interventions which have been grouped by year into implementation. Three school principals in a California district were in the first year of implementing a writing composition program and three principals in a Florida district were in the second year of the implementation of a mathematics curriculum. Three Colorado site principals in the third year of a science program implementation will be the subject of later analysis and reports. Thus, year one and year two principals' data is the focus of this report.

For purposes of this paper only those interventions which included the principals as a source of the intervention are reported; although, frequently persons such as assistant principal, resource teachers or other persons in change facilitator roles were reported as sources in the interventions. Frequencies of the targets, functions, medium and flow of the principals' interventions will be presented and discussed.

What Principals Do At The Level Of Practice

At this time the data base contains more than 2,000 interventions of various levels. Information about these interventions was collected from various individuals in the school and the school district. Each principal/school was paired with one R&D Center researcher who was responsible for all data collection at that site. Of the interventions documented, 1869 (87.1%) are incident level; 606 of these interventions involved the principal as a source (the person who initiates the action of the intervention). Of this number, 327 interventions were made by the California and Florida principals, the focus of this paper. In more than 95% of these cases, the principal was identified as the first coded source. That is, the coding

schema allows for multiple codings of dimensions (especially function, source and target) to accommodate for the complexity of the actions. Therefore, the source of the intervention could be coded as principal, principal and assistant principal, principal and resource teacher etc. However, the principal was identified as the most significant source by being named first in over 95% of the interventions selected for analysis.

Principals do a great deal; some do more than others. Table 1 provides frequencies of interventions for principals by district/year into implementation. There is a range across year one principals of 27 to 96 interventions; across year two the range is 28-65. The percentage of year one principals' interventions out of the total is 56% while year two principals have 44% -- not a striking difference. Probably the most telling characteristic of these data is the lack of a notable difference in the number of interventions performed in year one contrasted with year two. "It's not all done by the end of year one," as one researcher was heard to observe.

And indeed it wasn't. The princpal of school F opined, at the end of year one, that the math program was in hand and didn't require further attention. His position changed after receiving study-collected Stages of Concern data (Hall & Rutherford, 1976) and Levels of Use data (Hall, Loucks, Rutherford & Newlove, 1975). These measures describe teachers' concerns and use of new programs during implementation. These data indicated that implementation was not at a point to be "left on its own." The principal then set in motion a series of creative interventions to help teachers further with implementing the math program. One of these interventions was the reassignment of a fourth grade classroom teacher as a school-wide math resource teacher who would be on call and expected to be working in a broad supportive and facilitative role with teachers. Her students were

Table 1

Total Number of Incident Interventions
with Principal as a Source

District/Implementation Year	School Site	Number of Interventions	% of District	% of Total
California/Year One	A	60	32.8	
	B	96	52.5	
	C	27	14.8	55.96
Florida/Year Two	D	65	45.1	
	E	28	19.4	
	F	51	35.4	44.03
Total		327		99.99

redistributed among other fourth grade teachers. This intervention was followed by a host of others.

Another second year principal, at school D, received CBAM Innovation Configuration data (Hall & Loucks, 1981) and was soundly reinforced in her belief that a significant component of the math program was not implemented. Across the second year she and her administrative/facilitator team delivered a series of strategies, tactics and incidents to facilitate the implementation of the unused materials. All of these activities resulted in greatly increased materials use (Huling, Hall & Hord, 1982) and contributed to the 65 incident interventions in which the principal was involved (Table 1).

Meanwhile, the first year principals who showed a wider range of numbers of interventions, 27-96, were engaged in supporting implementation of the writing curriculum. This wide range across school A, school B and school C is most likely explained by the three facilitating styles of principals, proposed in a paper by Hall, Rutherford and Griffin (1982). The "initiator" principal had the largest number of interventions and the "responder" principal had the smallest number of identified interventions.

To learn more about what principals do, the set of interventions characterized by their coded dimensions will next be examined in terms of targets, functions, medium and mode of the principals. The data are grouped for year one and year two principals.

Targets of Principal's Interventions

The major differences in the targets of year one and year two principals are in targets 5, 6 and 8 (see Table 2). The year one California site principals targeted interventions more often at implementation site resource people (13.7%) than did the Florida principals, (2.8%). The California target 5 frequency may be explained by one of the principals who had a great deal of

Table 2

Targets of Principals' Incident Interventions
(Percent of Total Principal Interventions)

Targets		District/Implemenation Year: California/Year One	Florida/Year Two
1	Clients	2.7%	0.0%
2	An individual user	14.8	11.8
3	Subset(s) of primary or potential users	19.7	14.6
4	All primary/potential users	31.7	31.9
5	Implementation site resource people	13.7	2.8
6	Implementation site decision makers	0.0	16.7
7	Innovation facilitators	2.7	3.5
8	Immediate user system members	3.3	11.8
9	Extended user system members	3.8	.7
10	The change effort/ process	4.4	4.2
11	Blank (specify)	3.3	2.1
		100.0%	100.0%
		(n=183)	(n=144)

interaction with the school's resource teacher who was identified as a facilitator to help teachers with the new writing program. The principal directed this resource teacher in her work with teachers and also delegated a great deal of responsibility to her in her facilitating role. The Florida schools had some on-site resource teachers but they did not appear to receive as much "direction" from their principals.

Activities with assistant principals accounted for 16.7% of the Florida principals' targets, whereas there are no interventions targeted at AP's in California. The percentage of these interventions targeted at the AP's, implementation site decision makers (target 6), might be explained by the fact that each of the Florida schools had an assistant principal while the California schools had none. However, the resource teacher in the California school discussed above carried a role and responsibility on a par with assistant principals. In Florida the assistant principals had in the recent past carried the title of curriculum assistant and had responsibilities for helping teachers with new programs. The principals generally monitored the activities of the assistant principals, obtaining status reports from them about matters that had been planned. At other times the principals directed the AP through interventions on the AP's themselves.

Another difference in targets is that of target 8, immediate user system people. The higher percentage in Florida (11.8%) may be attributed to area math resource persons who train and help facilitate on request of the principal. It appeared that the norm for securing the aid of the area resource person was this: teachers asked their principal for assistance, the principal then telephoned the math coordinator, the coordinator came and responded to teachers. The district's policy of the principal calling for the coordinator to schedule assistance may account for the higher percentage of

immediate user system targets in the Florida schools. On the other hand, it is possible that consultants provided by the district are likely to be used more in the second year of implementation.

The remainder of the targets seem quite similar across the two years except for the California principals targeting the extended user system members. While the percentages are small, the California frequency is five times that of Florida. This is apparently due to one principal involving parents (classified as extended user system members) in the school's support of implementation.

Some of the similarities in the target distributions for each of the sites are also of interest. Although one district was in the first year of implementation and the other second, there are approximately the same proportions of occurrence of individual, subgroup and all teachers as a group as the target of principal interventions. It is curious that year two teachers, who would be expected to be more differentiated in their use, were treated as though they were more alike. Theory would suggest that interventions in the second year would be targeted more to accommodate individual differences in teacher use, but this does not seem to be the case in these data.

Functions of Principals' Interventions

Somewhat surprising is the large difference between year one and year two interventions with function 1, supportive or organizational arrangements and resources: California, 32%; Florida, 54% (Table 3). The traditional role of the principal is to handle such things as space, materials, staffing, scheduling and indeed these percentages exhibit those typical behaviors. However, one might speculate that most of those kinds of activities would have been accommodated in year one and therefore decrease in year two -- not so.

Table 3

Functions of Principals' Incident Interventions
(Percent of Total Principal Interventions)

Functions	District/Implementation Year: California/Year One	Florida/Year Two
1 Developing supportive or organizational arrangements & resources	32.2%	54.2%
2 Training	2.7	3.5
3 Consulting & reinforcing	24.6	18.1
4 Monitoring & evaluating	21.3	19.4
5 Communicating externally	3.8	.7
6 Disseminating	1.1	0.0
7 Impeding use	0.0	0.0
8 Expressing & responding to concerns	8.7	4.2
9 Blank (specify)	.5	0.0
	100.0%	100.0%
	(n=183)	(n=144)

In data analyzed from a pilot study done prior to the Principal-Teacher Interaction Study, the contrast of a year one principal and year two principal indicated a similar weighting to function 1 interventions by the year two principal (Hord, 1981). Is there more arranging and organizing to be done in year two?

The larger percentage in Florida may also be explained by the fact that the new math program was implemented without benefit of prior field testing. There was much attention to the needs for materials and testing revision during year one of implementation. Thus, at the beginning of year two there was a great deal of focus by principals on acquiring materials expected to have been revised.

Another factor that could contribute to the heavy use of function 1 interventions in Florida was the relationship of the area math resource coordinators with the schools. The district norms somewhat precluded coordinators from initiating a great deal of action with the schools. As already described, requests came to the principal and they called the coordinators for scheduling which would be coded under function 1.

Function 2, training, interventions were relatively few in both groups of principals, 2.7% year one principals, 3.5% year two principals. This is not surprising when considering the traditional role and activities assumed by principals. Typically, they do not see training as a function of principaling. When they express themselves on this point, their remarks are such as, "My teachers are professionals . . . I leave it in their capable hands." Frequently the principal identifies the content or subject matter specialist/staff developer as the person responsible for helping teachers develop new understandings and skills. Interestingly, one of the Florida study principals was very active in the training function for another

innovation being implemented in his school at the same time. These interventions are not included in Table 3 because they were employed for the other innovation (not the one under study by PTI). Nearly every week he held a one hour faculty training session, using the trainer's guide and leading the activities himself. This innovation was one which he personally valued and in which he invested his energies and clout in persuading teachers to adopt. It was a school decision to implement this program, whereas math (the Florida study innovation) was mandated for all schools by central office administrators.

Communicating externally, function 5, occurred more often in year one as did expressing and responding to concerns, function 8. There appears to have been more concern about feelings (function 8) in the year one interventions. This may be more a function of principals' styles than year of implementation, as the Florida principals seemed to be more task focused and less caught up in reprimanding or complimenting as an intervention function. Year one principals, more frequently than year two principals, intervened with function 3, helping teachers solve problems with initial use. It seems logical that teachers would need more help from facilitators during the first year; the principals in year one spent nearly one-fourth of their interventions in this function.

Medium of Principals' Interventions

In terms of the medium used by the year one and year two principals, there are no real differences between the groups. Data in Table 4 indicate more similarities between the years than differences. Face to face is the way more than 3/4 of the interventions in both groups were delivered. However, there does seem to be somewhat more use of the telephone in Florida. Until

Table 4

Medium of Principals' Incident Interventions
(Percent of Total Principal Interventions)

Medium	District/Implementation Year	
	California/Year One	Florida/Year Two
1 Face to face	78.7%	80.6%
2 Written	15.8	10.4
3 Audio visual	.5	.7
4 Telephone	3.8	7.6
5 Public media	0.0	0.0
6 None	.5	.7
7 Blank (specify)	.5	0.0
	100.0%	100.0%
	(n=183)	(n=144)

the data are analyzed further, there is uncertainty about how to explain this difference.

Flow of Principals' Interventions

There is clearly a difference in the two groups of principals' interventions flow--that is, interactive contrasted with one way (Table 5). Second year principals used interactive flow three times more frequently while the first year data indicate a 50-50 split. Year one implementation may require more directiveness. In the sample, one California principal was more direct and to some extent his style may be distorting the balance represented by the others. Since there was a high percentage of interventions from this principal in the data, the difference in the data of the two groups may be a function of this principal's style. Further analyses and looking at these data by individual principal will confirm or deny this speculation. More sophisticated and in-depth analyses will provide more specific insight into the intervening activities of the principals.

What Have We Learned?

When thinking about the data and the tentative interpretations offered in this paper several cautions must be observed. First is that these are very initial data analyses and represent the beginning of an extended data analysis plan. Frequency of intervention is being reported; saliency of interventions will be an important consideration in the next stage of analysis. Secondly, there has been a tendency to infer that the similarities and differences in frequencies that are being observed are due to year of implementation. It is also possible that they are due to differences in the innovations or possibly to characteristics of the two districts. However, other parts of the data collection activities have addressed contextual issues and characteristics of

Table 5

Flow of Principals' Incident Interventions
(Percent of Total Principal Interventions)

Flow	District/Implementation Year	
	California/Year One	Florida/Year Two
1 One way	48.1%	24.3%
2 Interactive	51.4	74.3
3 Blank (specify)	.5	1.4
	100.0% (n=183)	100.0% (n=144)

the innovations, thus we have a tendency to discount the use of attributes of innovations and district characteristics to explain many of the findings about principal interventions.

A related factor that clearly is a contributor to the variance is the difference that one principal can make in the total count for a particular intervention code. A particularly active or inactive principal can greatly skew the overall count. This is especially so since there were only three principals for each year of implementation. In future analyses, we are considering the use of proportions of each principal's interventions to adjust for this.

Looking across all the data, and including the researchers' clinical impressions, it is possible to offer some generalizations about the modus operandi of principals and what they do at the level of practice during the process of change.

1 Principals tend more often to deliver the same interventions to all teachers rather than individualize the intervention. They do not model a response to the theory of individual differences with regard to teachers, though they comment a great deal on attending to individual differences in students. Interventions were targeted to all users more than twice as often as to individual users.

2. Principals don't target very many of their interventions outside of the faculty, that is, toward parents or other community agents. Apparently, new program implementation is not a typical topic of interaction with others outside the school.

3. A large proportion of principals' interventions are managerial, i.e., function 1, developing supportive and organizational arrangements. Principals

tend to act more in their traditional role as "manager" than in an instructional leadership role.

4. Another traditional activity of the principal is monitoring and evaluation. In both year one and year two principals, this function accounted for 20% of all the interventions they made.

5. Although the current literature consistently emphasizes the importance of the principal as the instructional leader of the school, the data indicate that interventions exemplifying this role do not account for many of the principals innovation related activities. Function 2, training, in combination with function 3, consultation, only account for 1/5 to 1/4 of the principals' behaviors, in years two and one respectively. The literature about what should be and the reality of what is do not presently have a clear match.

6. Principals do their intervening face-to-face in large groups, small groups or individually. The face-to-face mode was employed in 80% of their interventions.

7. From the researchers' qualitative data and impressions, the flow of principals' interventions may be a function of the principals' style. Although the quantitative data show more one way actions in year one, no generalization can be made about the directional flow of principal interventions.

8. An interesting finding is that principals do more than they think they do. In early conversations before the study began, principals suggested that they may not have much to offer to the study because they "didn't do that much." However, in end of study debriefings with principals, they said that being involved in the study caused them to reflect on what they did and made them realize how much they did to support the implementation of new programs.

In addition, the researchers were constantly unearthing interventions that principals made that they didn't see as being important.

9. Principals do more than teachers think they do, or more than teachers remember that they do. In four face-to-face interviews with teachers during the year of data collection they were asked to recall any actions or interventions done by principals. Though teachers generally viewed the principals as being available, helpful and supportive, they did not often remember many of the things the principal did. Interestingly, often the incident interventions that they did recall were ones that principals had discounted as being important.

But, most importantly --

10. One year won't do it for implementation, if the innovation is complex or requires much change in teacher practice. It is clear from the data of second year principals that support and facilitation for teachers continued throughout the second year of implementation with little decrease in activity by the principals. There is a reality that change is a process requiring much time and effort; there is still a good deal to be done in the second year of implementing a new program. This is the most compelling statement to be made by these frequency data. Principals must recognize that their role as change facilitator does not come to an end after just one year. Because there is a lot to be done in year one, two and more, it appears that the principal who perceives all that should be done for implementation requires a key assistant to help. We are noting that principals who do not have assistant principals or others to fill this role will annoint an individual with authority and use this lieutenant in a crafty way to support school improvement efforts. It appears that the principal may use others in a "team" or "support group" kind of way; thus, all activities may not require

the principal as the sole actor in implementation. This is an area for further investigation.

Concluding Remarks

The information that has been documented about principals' interventions in this year-long study is data-based; it was collected by rigorous methods; it is countable and quantifiable. It was not derived from a couple of conversations plus a qualitative leap. The kind of analysis of principals' interventions used in this study enables us to look not only at differences between principals (relative to year of implementation, facilitating style, etc.), but it also allows one to look across principals for general mode of operation. Regardless of the innovation, the individual principal's behaviors and role can be spelled out in detail. Focusing on individuals provides the opportunity to diagnose training needs as they relate to facilitating change efforts.

After linking interventions with their effects, it may be possible to make suggestions about what kinds of intervention to use in what context for what kind of effect. That is, it will be possible to say what kind of function is best delivered by whom, to whom, where, and how. In this way, it is possible to get to the particulars so training might be based on specifics. For instance, if it appears that "effective" principals deliver many "consulting and problem solving" interventions to teachers, then it will be important to train principals in these activities. If we learn that "effective" principals are those who use highly directive one way interventions, that could dispel a current myth and we will need to train principals to be more "directive." It becomes easy to see that the appropriate training of principals--in effective intervening--is a much needed

link to the improvement of practice by teachers. Thus, the consideration of how to make the new findings about what principals do-- and can do--to support faculty in school improvement efforts available, relevant and useful to the practice of principals is of the utmost urgency.

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